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Effectiveness of the Interactive Videodisc-Enhanced German Gateway Program

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U. S. Army

Research Institute for the Behavioral and Social Sciences

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the course were compared. Language proficiency was measured both by self-report and by pairs of trained raters in an Oral Proficiency Examination. The two groups were comparable on precourse measures with the exception of time in Germany. (The IVD Field Test group had significantly more time in Germany.) Controlling for this factor, proficiency in German was greater for the IVD Field Test group. However, the final examination for the course was changed at the same time as the introduction into the course of the IVD materials and probably contributed to the effect. Listening comprehension of German was also better for the IVD Field Test group than for the Baseline group. The IVD materials were well received by both students and instructors, although there was some ambiguity about the role of the materials in the German Gateway course. The findings from this research have three different levels of use: (1) they can contribute to the future role the IVD materials developed for the DLI German Gateway course will have in that program, (2) they can provide insight into the use of IVD technology in language training, and (3) they can benefit the more general application of IVD technology to training.

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FOREWORD

The U.S. Army Research Institute (ARI) helps the Army with its training mission in a variety of ways. Evaluating technologically based systems designed to assist training is one area in which ARI contributes. The Presidio of Monterey Field Unit is colocated with the Defense Language Institute (DLI), which has the mission of training linguists for the military. When DLI sought to exploit interactive videodisc (IVD) technology in teaching language, ARI agreed to assist by evaluating an IVD system designed for the German Gateway program. The research was performed under an existing Letter of Agreement between DLI and ARI entitled "Cooperative Research Program," dated April 1984. The results of the research were briefed to the Chief of the Educational Technology Division of DLI during August 1987. The findings are being used not only by DLI in the training of languages but also by a broader community interested in improving training through technological innovation.



EDGAR M. JOHNSON
Technical Director

EFFECTIVENESS OF THE INTERACTIVE VIDEODISC-ENHANCED GERMAN GATEWAY PROGRAM

EXECUTIVE SUMMARY

Requirement:

Integration of emerging instructional technologies into existing training programs has the goal of improving training while reducing costs. Evaluation of new systems in the context of the training program is the best method for determining if this goal is being achieved.

The Defense Language Institute (DLI) developed an interactive videodisc (IVD) system for use in German Gateway course. The Army Research Institute (ARI) conducted an evaluation of the IVD system in a field test. The objectives of the research were (1) to compare the effectiveness and acceptability of the video-enhanced German Gateway program with the existing German Gateway program and (2) to identify user issues in the adoption of the interactive video course materials.

Procedure:

The research used a Baseline group of 49 students who participated in the existing course in 1984-5 and an IVD Field Test group of 40 students who took the video-enhanced course in 1986. Group comparability was assessed for demographic and German-language-experience measures. Students' German proficiency and attitudes about the course were compared. Language proficiency was measured both by self-report and by pairs of trained raters in an Oral Proficiency Examination.

Findings:

The two groups were comparable on precourse measures with the exception of time in Germany: The IVD Field Test group had significantly more time in Germany. Controlling for this factor, proficiency in German was greater for the IVD Field Test group. However, the final examination for the course was changed at the same time as the introduction into the course of the IVD materials and probably contributed to the effect. Listening comprehension of German was also better for the IVD Field Test group than for the Baseline group. The IVD materials were well received by both students and instructors, although there was some ambiguity about the role of the materials in the German Gateway course.

Utilization of Findings:

The findings from this research have three different levels of use: (1) they can contribute to the future role that the IVD materials developed for the DLI German Gateway course will have in that program; (2) they can provide insight into the use of IVD technology in language training; and (3) they can benefit the more general application of IVD technology to training.

**EFFECTIVENESS OF THE INTERACTIVE VIDEODISC-ENHANCED GERMAN
GATEWAY PROGRAM**

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EFFECTIVENESS OF THE INTERACTIVE VIDEODISC- ENHANCED GERMAN GATEWAY PROGRAM

INTRODUCTION

The U.S. Military operates in a worldwide, multilingual, multicultural context. The ramifications of this fact on linguistic training requirements present a formidable challenge. A consistent need exists for a vast and constantly replenished supply of linguists trained in a wide range of languages. The requirement for training includes the organizational capacity to teach even infrequently needed languages as well as the ability to respond to the sudden and often unanticipated surges in demand for a particular language. The Defense Language Institute (DLI), which has the foreign language training mission for the military, has found, despite claims made for various methods--from Berlitz to Superlearning--that learning a foreign language is a highly time-intensive process. Yet, the military must rapidly train linguists to functional levels of proficiency to achieve maximum benefit from short-term enlistments, as well as to meet surge requirements.

The contemporary focus in foreign language education on the, so-called, communicative approach emphasizes speaking and listening skills in realistic and authentic communicative contexts (Krashen, 1982; Sanders and Kenner, 1984). This approach, however, has generated limited development of technological applications to the field (Underwood, 1984). For example, computers seem more readily adaptable to the kinds of learning activities associated with traditional methods emphasizing grammar and vocabulary drills. Indeed, one argument for the development and use of foreign language Computer Assisted Instruction/Computer Assisted Learning (CAI/CAL) programs is that they can free the instructor to conduct communicative activities.

With the development of interactive video based upon the technology of interactive videodisc (IVD), however, comes the capability of providing the student precisely the realistic and authentic context the communicative approach prescribes. Further, the use of interactive video in foreign language instruction has high face validity. Not only is learning enhancement provided by multisensory presentation of instructional materials, but also interactive video has the capability to present a language in realistic situational and cultural contexts where the student's ability to understand and respond results in simulated real-world consequences. In addition, a machine-based instructional system affords a versatile and flexible means of augmenting existing teaching methods and curricula, thereby potentially increasing institutional flexibility. Verano (1987) presents an excellent literature review and experimental results indicating that interaction with the learner is the critical feature of IVD technology in achieving superior learning.

Background

To take advantage of potential technological contributions to training capacity, DLI established a specialized office to examine innovative instructional technologies. The Educational Technology Division of DLI recognized the potential of IVD in foreign language education and began to explore its developmental feasibility. This effort became a complex array of individuals and organizations with the unifying objective of developing and testing the interactive video technology. The German Gateway Course became the testbed for the evaluation of the technology at DLI.

The Monterey Field Unit of the Army Research Institute (ARI) agreed to assist DLI in the evaluation of the video enhancement to the German Gateway Program. In consultation with the New Systems Training Office and German Gateway staff, ARI developed an evaluation plan which guided evaluation activities. The Research Branch at DLI assisted in refining and defending the plan.

German Gateway program

German Gateway exists to provide brief, intensive training in German language and culture to Army officers, primarily at the O5 and O6 levels, assigned to command positions in Germany. The rationale for the course is both political and functional in the sense that a functioning command of the language is neither required by these officers' positions and duties, nor is it attainable (beyond level 1) in the time available. Rather, the purpose of the course is to encourage interaction between the officers and the host German communities through the development of cultural awareness and sensitivity and the provision of a minimal language ability.

The Gateway course consists of sixteen modules, eleven of which must be completed and a final exam taken to receive a diploma. The final exam grade and number of completed modules is recorded on the officer's record. Each module consists of a set of audio cassette tapes, text, grammar workbooks, self-administered quizzes, and cultural information. The officers spend 6 to 8 hours a day at the course facility and many study during evenings and weekends.

Instructors are available to work with each student on an individual basis for at least an hour a day, and students are expected to avail themselves of this resource. The results of a German Gateway program needs assessment, conducted prior to the commencement of IVD development for the course, indicated that instructors and students alike regard the time spent with the instructors as the most important educational element of the course.

The course is characterized as self-paced, but the students quickly learn, with guidance from the instructors, that they must move along at a fairly standard rate if they are to complete the course in the 7 weeks normally allotted for the program. Generally, a mastery approach to the course, where complete facility with the material attained, typical in the first days, must be abandoned by all but those officers with a substantial background in German. Most students have to develop new learning strategies and priorities since language studies are quite different than other courses of study to which students have been exposed. This novel learning experience can be quite threatening and frustrating to persons used to career and academic success. The instructors thus become counselors and diplomats as well as teachers, a fact which may enhance the reported contribution of instructors to the course.

Before beginning the German Gateway course at DLI, students are supposed to receive and complete materials constituting the "Headstart Program" (tapes, texts and workbooks) at their previous duty assignment. In fact, of the few who receive it, fewer complete the material. The years of experience by the Gateway staff with this situation have led to the practice of allocating 1 to 2 weeks at the beginning of the Gateway program for coverage of the Headstart material.

The pre-IVD Headstart/Gateway course is generally regarded at DLI as excellent, though "traditional" in nature. That is, the Headstart materials are pure memorization and the materials are "grammar driven" rather than having the communicative pedagogical basis to language teaching. Interest in IVD materials is, in part, related to the German Gateway staff's desire to supplement the existing course with more communicative material.

The materials and the instructors for the German Gateway Course need to be adaptable to a broad range of language experience and ability. The population of the program consists of mature, career-established officers, in contrast to the typical DLI initial entry students. There is no language aptitude requirement for the course, so there is not only a considerable variability in general language experience and German language and cultural exposure, but also in language aptitude. Gateway students may have had no prior language training whatsoever or may have had years of training in several languages. Some students have had several years of German and spent extensive time in Germany, while others have had neither German training nor time in Germany.

Dependents are permitted to participate in the course on a space-available basis. Few dependents, however, complete the full program.

New students enter the Gateway program approximately every 2 weeks so that, at any given time, the students in the program will be at different points in the course. The size of the German Gateway student population varies on an annual basis, with

peak periods occurring from January/February through April/May of each year when the total number in the program may reach as many as fifty. For the rest of the year, the Gateway population may vary from as few as three to five in the whole program to about ten to fifteen.

Just as the size of the student population varies, so does the number of instructors involved with the program. During the time of peak student population there may be as many as ten instructors, or as few as one during low enrollment periods. The policy is to assign instructors to the program as needed to maintain a student to instructor ratio of five to one. However, depending on other course demands on the German Department staff, and the overlap of in-coming and exiting students in the program, the ratio at times reaches seven to one. Instructors are rotated through the Gateway course for six month periods except when temporarily augmenting the staff during peak period coverage.

Instructors generally regard teaching in Gateway as a desirable assignment. The teaching is a welcome change of pace from the classroom routine since it affords the opportunity to work individually with students. Of course, despite official policy, instructors bring with them their own methods and orientations to language teaching. They may be "traditional," "communicative," or, most likely, have their own individual approach incorporating elements they are comfortable with from a variety of methods. Their orientation does, however, affect how receptive they are to a communicatively oriented technological innovation.

Objectives

In the design of this research investigation, three objectives were identified. The first objective was to compare the effectiveness and acceptability of the Video Enhanced German Gateway program with the existing German Gateway program. The second objective was to identify user issues in the adoption of the interactive video course materials. The third objective was to describe issues, factors, and conditions in the planning and development of the IVD materials which facilitated or impeded project development. This report presents findings supporting the first and second objectives. Findings relevant to the third objective are planned for a subsequent report.

METHOD

Subjects

The sample for this research consisted of 89 participants in the German Gateway program at DLI. Ten (11%) of the sample were dependents of military personnel in the program. The control or Baseline group (N=49) of subjects began the course between July 1984 and April 1985 before the interactive video disk materials

for the German Gateway program were developed. The interactive videodisc (IVD) Field Test group (N=40) started the course between March and July 1986.

Instruments

The German Gateway Pre-Course Questionnaire (Appendix A) was designed to provide information regarding previous language training, students' expectations in terms of German functional ability as a result of taking the course, and general attitudes about the importance of the course. Pilot testing of the questionnaire revealed a strong concern of the subjects about the potential for identifying them with their responses. Therefore, only minimal personal information was requested and an attempt was made to minimize their concern. For example, age category was substituted for rank, as providing roughly equivalent information.

The Entrance Proficiency Examination (Appendix B) was developed specifically for this research by DLI to measure the degree of functional German language ability possessed by entering participants. The test measures skills from simple vocabulary recall based on German language exposure or prior course work to minimal functional German language capacity. The examination was intended to provide the research with the primary measure for assessing group comparability of initial German language skill.

The Post-Course Questionnaire (Appendix C) was developed to assess students' perceptions of the effectiveness of the course along several dimensions, the importance of various components of the course, and their satisfaction with their language skill achievement.

An IVD use Questionnaire (Appendix D) was developed to assess the attitudes of users toward the IVD materials and its capabilities. This instrument was administered only to students in the IVD Field Test group. The primary measure used to assess end-of-course group differences in learning German was an Oral Proficiency Examination (OPE) (Appendix E) that was developed by the project Subject Matter Expert specifically for the evaluation. The exam consisted of nine questions with a total score of 460 points based on scores for pronunciation (45 pts.), fluency (40 pts.), socio-cultural linguistic ability (15 pts.), grammar (95 pts.), vocabulary (140 pts.), and tasking (125 pts.).

As a part of the research, German Gateway instructors wrote student summaries at the end of the course for each student. The purpose was to identify any unique circumstances or characteristics of individual students which the instructor thought relevant to their learning.

In general, the instructor summaries served to substantiate other data; for example, that the person had a good language background and worked conscientiously, or had a rough time and barely made it through the course. The only instance in which an instructor summary identified significant factors that were taken into account in the data analysis was in providing the background for a single extreme case. In the preliminary analysis of the baseline data, it was noted that several factors combined to create an "exceptional case" that should be matched in the field test or dropped from the comparative analysis. This person was able to complete only six modules, had an extremely low score on the OPE and received a certificate of attendance rather than the diploma. Since this situation is rare but does occur in the program, the subject was retained as part of the baseline sample pending determination of a match in the field test. The failure to identify a comparable situation in the field test group resulted in the case being dropped from the comparative analysis.

German Gateway IVD System

The hardware for the German Gateway IVD System is nine units, each consisting of a videodisc player, color monitor, headset, and controlling micro-computer with dual 3 1/2 inch disk drives. The courseware, produced by Brigham Young University under contract to DLI, is a series of lessons based on everyday situations. The video portion was filmed in Germany. Each lesson is on its own 3-1/2 inch disk, while the video and audio for several lessons are on a single platter. Lessons deal with such situations as: telephone, train, post office, shopping, apartment renting and restaurant. The system supports several special features in addition to playing and reviewing the situation. These features include keyword/phrase help screens, text with audio, vocabulary help screens, grammar/cultural notes, questions and help screens while working with the questions.

Procedure

Subjects completed both the German Gateway Pre-course Questionnaire and The Entrance Proficiency Examination at the beginning of the course. At the completion of the course they completed the Post Course Questionnaire and were administered the Oral Proficiency Examination. The Instructor Summaries and individual course module scores were also obtained. Only the IVD group completed the IVD use questionnaire.

Group comparability

Demographics. No statistically significant differences between Baseline and Interactive Video Disk (IVD) Field Test groups of German Gateway students were found for age ($M=40$), education (94% completed college, 77% had advanced degrees), or experience in Germany (94% had been to Germany).

Table 1 shows the length of time spent in Germany for both groups. The Baseline group reflected the common three year assignment as the modal pattern, however the IVD shows a bimodal pattern, with many of the officers having two Germany tours.

Table 1

Length of Time Spent in Germany
by Group.

Length of Time	B		IVD	
	N	%	N	%
Less than 1 week	2	4	2	5
Less than 1 Months	0	0	1	3
Less than 1 Year	1	2	2	5
1-2 Years	2	4	3	8
2-4 Years	29	60	13	33
4-6 Years	8	17	5	13
Over 6 Years	2	4	12	30
Total	44		38	

Using actual months in Germany, a significant difference, ($t(87) = 2.02, p = <.05$) was found, the IVD group having spent more time in Germany. This finding suggests the need to consider the "time in Germany" variable in the analysis of performance data. There is no obvious explanation for this difference. Of course, the two groups selected were almost a year apart, and there were some differences in the program cycles from which the samples were drawn. The Baseline group was about equally split between peak and slack inputs while the Field Test group was drawn largely from the peak input period. There were no known differences or changes in personnel selection or assignment processes within the military related to this sample difference.

Language training. Forty-eight percent of the students in both groups had had some German language study with no significant group difference. Duration of German study ranged from less than one semester in high school to 36 total semester

hours. The conditions of the German training (educational level, type of system, and numbers of years since trained) did not differ significantly between the two groups.

Sixty-seven percent of the subjects had had previous training in other foreign languages. No statistically significant difference was found between the groups. Of those with previous other foreign language study, the median reported number of semester hours of study was 10.8. Group differences were non-significant.

The Entrance Proficiency Examination (EPE) constituted the primary measure for assessing group comparability of initial German language skill. Table 2 presents the results for the two groups.

Table 2

German EPE Scores by Group.

EPE Total Score (300 possible)	Base		IVD	
	N	%	N	%
0	11	22	12	30
1-10	7	14	2	5
11-50	12	15	8	20
51-100	6	12	8	20
101-150	6	12	3	8
151-200	6	12	5	13
201-250	1	2	2	5
		$\bar{M} = 55.92$ $SD = 63.73$		
			$\bar{M} = 64.28$ $SD = 71.68$	

The difference between the groups is not statistically significant ($t(87) = .58$, $p > .5$), indicating the baseline and IVD groups do not differ in initial German language ability.

Attitude toward learning German. On the Pre-course Questionnaire subjects responded to a series of statements about the possible relevance of and reasons for learning German.

Table 3 shows these data. The two groups showed no significant differences in their responses to these items so the data have been combined. Most dependents did not answer the duty-related items. Responses indicate that the importance of the course is more related to the ability to function in Germany, either on or off the job, than strictly to career interests.

Table 3

Response Distribution for Pre-Course Attitude Statements.

	strongly agree	agree	disagree	strongly disagree
1. Knowing German will be important in performing my official duties in Germany.	50	35	2	0
2. Taking this course is relevant to my army career.	26	40	14	3
3. Understanding German culture will be important to me while in Germany.	69	20	1	0
4. I need to learn German in order to function in German society.	48	37	3	0
5. I do not expect to have any trouble learning German.	7	39	37	5

Functional language expectations. On both the pre and post-course questionnaires, subjects were asked to respond to a 10-item list of specific foreign language use situations in terms of skills they expected at the completion of Gateway. The items were taken from a survey (Ryan-Jones & Burns, 1981) where Army commanders in Germany identified the kinds of activities for

which they needed German language skill. Only the pre-course responses are presented here in Table 4 to compare the initial expectations of the Baseline and IVD groups. The post-course responses will be presented later.

To make the pattern clearer, the "very easily" and "easily" responses have been combined into a "can do" category. "With difficulty" and "with great difficulty" are combined into a "cannot do" category. Data are shown as percentages for ease of depicting comparisons. Some dependents did not respond to the duty related items, accounting for totals of less than 100% (See Appendix A for Questionnaire and complete item wording.)

Table 4

Percentages by Group of Ability Expectations for German Language Activities.

Activities	Can Do		Cannot Do	
	B	IVD	B	IVD
Hail Taxi	100	98	0	3
Small Talk	57	53	43	48
Hotel Arrangements	98	98	2	3
Radio Weather	65	50	35	50
Deal with Police	54	48	46	53
Military Personnel	57	63	41	38
Official Correspondence	17	23	83	78
Make a Speech	38	43	63	58
Official Phone Call	31	40	69	60
Meet Gov't Official	50	43	50	58

Both groups show a similar pattern of being somewhat more conservative in their estimates of duty related abilities. The differences between the Baseline and IVD groups are not statistically significant for any of these items.

RESULTS: PROFICIENCY AND ATTITUDES

IVD impact on German proficiency

The Oral Proficiency Examination (OPE) was administered to each student by two DLI trained and certified testers. Ideally, the testing would have been done by a team of qualified proficiency testers not involved in the project. However, practical considerations lead to testing being conducted by pairs of available test-qualified instructors teaching in German Gateway at the time, including the project Subject Matter Expert. The scores of the two raters were averaged in arriving at a final student score.

Seven raters were involved in the Baseline group testing with four persons, in varying combinations, administering most of the tests. For the IVD Field Test group, 33 of 40 tests were administered by the same two testers with one of the two testers involved in each of the other seven tests. This pair of testers included the Subject Matter Expert and the one test-qualified instructor (not a Baseline group tester) in the program at the time of the field test.

One rater in this same pair of raters had consistently and significantly higher ratings ($M = 326.94$) than the other rater ($M = 289.73$), $t(32) = 6.85$, $p < .001$. This disparity was reduced by dropping one dimension on the test where the discrepancy was greatest and reflected a different rating criterion. When this was done, the statistically significant difference between the two raters was eliminated $t(32) = 1.16$, $p > .2$.

Analysis of covariance performed on the total remaining points, with months in Germany as the covariant, indicated a difference between the two groups with the Field Test group ($M = 214.04$) performing significantly better than the Baseline group ($M = 155.78$), $t(85) = 5.54$, $p < .001$. This finding suggests the students using the IVD materials achieved greater proficiency than those in the Baseline group. However, because of the questionable tenability of any strict assumption of randomness of rater assignment for scoring of the the OPE, we examined another variable related to the OPE but less affected by rater judgments.

Examination of the OPE protocols revealed much of the group difference in OPE scores is attributable to a difference in the number of questions students attempted. To clarify this difference, we calculated the number of questions each student missed. We employed a conservative coding scheme. For the Baseline group, if either rater gave any points the question was counted as answered. For the IVD Field Test group, a question was counted as a missed question if either rater gave zero points for the question. Even with this approach, the difference between the groups is apparent in Table 5.

Table 5

Missed OPE Questions by Group.

Number	Base		IVD	
	N	%	N	%
0	10	21	30	75
1	14	29	7	18
2	15	31	3	8
3	9	19	0	00

While both the combined raters scores on the OPE and the items missed on the OPE tend to support the effectiveness of the IVD, unfortunately these data cannot be interpreted as necessarily supporting the positive effects of the IVD. The findings are complicated by the fact that the program began using a new German Gateway Final Examination (GGFE) at the same time the IVD field test began. The decision of the German Department to change the GGFE was intended to promote a proficiency-oriented approach. As discussed above, the use of IVD was also intended to support the proficiency orientation. From a programmatic point of view it made very good sense to initiate both changes simultaneously as part of a communicative overhaul of the program. However, the fact that tests tend to structure teaching as well as student study also clouds the findings of this research.

Problems with the original GGFE resulted in its rejection as an adequate performance measure for the IVD evaluation. Its discrimination among students was minimal; it had been used for many years and was probably compromised; and it was essentially an achievement test measuring specific course content rather than a broader concept of functional ability in the language. When the new test was developed, the German department eagerly and quickly adopted it. The new test, with alternate versions of test items, involved role-play situations which tested the student's ability to perform in the language. Table 6 shows that the new GGFE does seem to have greater score dispersion, but any further comparison between the groups is not warranted.

The new GGFE is similar but not identical to the OPE devised for the evaluation. The new GGFE scores of the IVD group have a significantly higher correlation with the OPE scores ($r = .81$) than the original GGFE scores of the Baseline group have with their

OPE scores ($r = .58$), ($Z = 2.00$, $p < .05$), suggesting the new GGFE and the OPE are more closely measuring the same construct. Not realizing the research need for comparability of course tests, the German Gateway staff was pleased with what they perceived to be an improved test for student evaluation purposes. Although ARI explained the requirements for exact course test comparability, in the final decision the interests of the program prevailed over the requirements of the evaluation and the new test was adopted.

As a result of the course testing difference, the research findings could as readily be considered a study of the effects of modifying the test process in the program as of the effects of the introduction the IVD. The conclusion from the OPE data then must be that there is evidence of improvement in student performance that could be attributable to either the IVD, the new course test structure, or to a combination of the two factors, both contributing to proficiency-oriented instruction.

Table 6

Score Distribution for Baseline on Old and for IVD on New GGFE.

GGFE score	Base		IVD	
	N	%	N	%
70-79	6	13	9	26
80-89	8	17	10	29
90-99	32	70	15	42
100	0	0	1	3
Total*	46		35	

*Missing scores are mostly dependents who usually did not take the final exam.

Another performance measure, though not a measure of tested proficiency, is the number of instruction modules of the German Gateway material students completed. The IVD group, generally, did not complete as many modules as the Baseline group. Table 7 shows these data. With the addition of the IVD material, apparently the total time required to complete the modules is

longer, and does not allow for including the five supplemental modules. In addition, some students tried to use any remaining time after completion of the basic 11 modules to finish or review IVD material. Thus, the inclusion of IVD material does not seem to encourage study or completion of the full 16 modules in the German Gateway course, and may inhibit it. However, the completion of fewer modules by the IVD group does not appear to have a deleterious effect on their proficiency, as indicated by the measures discussed above.

Table 7

Modules Completed by Group.*

Number	Base		IVD	
	N	%	N	%
10	0	0	3	8
11	29	62	23	58
12	0	0	6	15
13	3	6	2	5
14	0	0	0	0
15	2	4	1	3
16	13	28	5	13

* Dependents were handled differently in program. Information not obtained for baseline dependents.

IVD impact on student course assessment

This section reports the results from the Post-Course Questionnaire administered to both groups. In the tables which follow, the means were calculated from the full five point scales. However, displayed responses are collapsed into the three categories for simplification: negative, neutral, and positive. The Baseline N is 45 and the IVD N is 36. Differences between baseline and IVD were tested for each item and were statistically significant where indicated.

Table 8

Percentages by Group for Effectiveness Assessment of Course.

Evaluation Item	Ineffective		Neutral		Effective		Means	
	B%	V%	B%	V%	B%	V%	Base	IVD
Pronunciation	4	6	22	25	74	69	3.9	3.9
Grammar/Syntax	20	8	33	36	48	56	3.4	3.6
Vocabulary	4	3	28	25	67	72	3.8	3.9
Idioms	15	11	39	53	46	36	3.4	3.3

The IVD did not result in significant overall increases in the students' assessments of the program (Table 9). Table 9 shows how satisfied students were with their German language skills. The IVD group was significantly more satisfied with their listening comprehension skill than was the Baseline group. As expected, the Field Test group did indicate (Table 10) an importance of the audio-visual material comparable to that of other aspects of the course, and this rating was significantly higher than that of the Baseline group (which had available only Headstart videos and other taped material).

Table 9

Percentages by Group for Skill Satisfaction.

Evaluation Item	Dissatisfied		Neutral		Satisfied		Means	
	B%	V%	B%	V%	B%	V%	Base	IVD
Listening Comprehension	24	3	35	42	41	56	3.2	3.8*
Speaking	30	3	22	61	48	36	3.2	3.4
Reading	13	0	13	36	74	64	3.8	3.8

* $t(80) = 2.98, p < .01$

Table 10

Percentages by Group for Importance of Course Components.

Evaluation Item	Unimportant		Neutral		Important		Means	
	B%	IVD%	B%	IVD%	B%	IVD%	Base	IVD
Tapes	7	6	33	25	61	69	3.7	3.9
Texts	7	0	28	17	65	83	3.9	4.25
AV Material	61	17	17	14	22	69	2.3	3.7*
Instructors	0	0	13	8	87	92	4.6	4.7
Quizzes/tests	20	14	22	28	59	58	3.5	3.5
Exercises	2	8	28	22	70	69	4.0	3.8

*N(B) = 41 N(V) = 36 $t(75) 4.68 p < .001$

Table 11

Percentages by Group for Adequacy of Learning in Specialized Areas.

Evaluation Item	Inadequate		Neutral		Adequate		Means	
	B%	V%	B%	V%	B%	V%	Base	IVD
Simulated Real Life:								
Communication	11	3	20	19	69	78	3.8	4.1
Cultural Info.	16	3	18	34	67	63	3.6	3.9

Table 12

Percentages by Group for Easiest and Most Difficult Learning Areas.

Learning	Easiest		Most Difficult	
	B%	V%	B%	V%
Listening Comprehension	9	31 **	24	6 *
Pronunciation	27	14	0	3
Grammar/Syntax	7	0	40	49
Vocabulary	9	3	2	3
Reading Comp.	49	53	2	3
Fluency	0	0	31	38

N=45 (B) 35 (V)

* $p < .05$

** $p < .01$

Tables 12 and 13 present responses to questions identifying language areas students found to be the easiest and most difficult to learn in the course. Each pair of proportions in Table 13 was tested for differences with the results shown. The difference between the groups in listening comprehension is obvious. Not only do the percentages related to listening comprehension vary between the two groups, they actually reverse--listening comprehension is one of the skills regarded as easiest by the Field Test group and most difficult by the Baseline group. Since listening comprehension is an important aspect of the communicative approach and one of the skills the IVD directly supports, these data suggest that the IVD may have contributed to acquiring listening skills.

Table 13 shows the resources found to be most useful keyed to the student's identified easiest and most difficult language areas. Tests of the differences in each pair of percentages were conducted with the results shown. Students in the IVD group reported that audio video materials contributed to their identified easiest program component significantly more than students in Baseline group reported.

Table 13

Percentages by Group for Most Useful/Helpful Program Component.

Component	Easiest		Most Difficult	
	B%	IVD%	B%	IVD%
Tapes	16	11	2	3
Texts	49	56	16	28
Instructors	34	22	80	67
Tests	2	0	2	3
AV Material	0	11 *	0	0

* $p < .05$

Most students in both groups reported that their interest either increased (59%) or started high and remained so (32%). The primary reason given for the increased interest was the challenge experienced as a result of minimally mastering the basics of communicating in German.

In the responses to the item about appropriate course length only three people in the Baseline group and two in the Field Test group thought the course was too long, all having extensive previous training in German. Half in each group (B=53%, IVD = 56%) found the current 6 to 7 week length of the course to be about right, with most of the remainder recommending an 8 to 12 week course. The introduction of the IVD did not result in any significant differences in student perceptions of the appropriate course length.

The open-ended comments made by the Field Test group focused on issues related to the IVD to such an extent that the same sets of categories could not be used for the two groups. Only two categories were relevant to both groups. Sixteen people in the Baseline and nine in the IVD group made comments related to the need for more conversational practice, either by having more instructor time or through instructor mediated group sessions. Four Baseline and six Field Test students mentioned the need for a longer course in their comments as well as in the response to the appropriate course length item. Otherwise, the Baseline student comments dealt with the need for a review of English grammar, the need for exposure to a greater variety of German speakers, and more military or professional terminology. The IVD group emphasized the need to continue the Headstart part of the

course (32%) and to allocate time for IVD use (18%). Other comments made by two or more individuals included the need to better integrate IVD materials into the program, for more instructor encouragement to use IVD, and to have the facility available at night.

IVD impact on self-assessed German skill

At the end of the course, students were asked to assess their abilities to perform, in German, the same activities which they rated prior to the course according to their expectations. Table 14 shows the responses compared to expectations for both groups. The responses are again combined into dichotomous categories. The "can do" percentages are provided along with the pre/post differences for both groups. (See Appendix A and C for complete item wordings). None of the between group differences are statistically significant, nor are the mean pre/post percent differences for combined social and duty-related activities ($\underline{M(B)} = -17\%$, $\underline{M(V)} = -15\%$). However, overall it seems clear that assessed abilities are below pre-course expectations. These values probably reflect an adjustment to somewhat unrealistic initial expectations rather than having much to do with reflecting course satisfaction.

Table 14

Pre/Post Skill Assessments by Group.

"Can Do"						
Activities	Pre		Post		Difference	
	B%	V%	B%	V%	B%	V%
Hail Taxi	100	98	80	89	-20	-9
Small Talk	57	53	33	36	-24	-17
Hotel Arrangements	98	98	87	92	-11	-6
Radio Weather	65	50	33	39	-32	-11
Police Situation	54	48	28	29	-26	-19
	N=49	N=40	N=46	N=36		
Military Personnel	57	63	33	17	-24	-46
Off. Correspondence	17	23	20	17	+3	-6
Make Speech	38	43	36	43	-2	0
Off. Phone Call	31	40	27	29	-4	-11
Meet Gov't Off.	50	43	20	17	-30	-26
	N=48	N=40	N=45	N=35		

IVD impact on instructor contact time

Does instructor involvement with the IVD interfere with the time available for students, or conversely, do students use the IVD instead of working with the instructors? There were large differences among instructors in the amount of time spent with students. An indication of this variability is evident from the mean times instructors reported spending with students. For those students with the same instructor throughout, the means ranged from 692 to 1705 total minutes (11.5 to 28.4 hours) with instructors for the Baseline group, and 798 to 1529 total minutes (13.3 to 25.5 hours) with instructor for the IVD group. Given this extreme variability plus the fact that the IVD Field Test group has greater variance in times ($F(36,44) = 1.86$, $p < .05$), the significant statistical difference between the groups

indicated by the data in Table 15 is probably best interpreted as indicating there is no evidence that the IVD reduces the amount of student/instructor contact time and may increase it. The increase could be accounted for by increased instructor and/or student enthusiasm during the IVD Field Test phase of the research due to factors contributing to the Hawthorne effect.

Table 15

Mean Instructor-reported Time Spent with Students by Group.

Minutes	B		IVD	
	N	%	N	%
200-399	0	0	2	5
400-599	4	8	1	2.5
600-799	6	12	1	2.5
800-999	20	41	1	2.5
1000-1199	9	18	5	12.5
1200-1399	1	2	8	20
1400-1599	2	4	10	25
1600-1799	2	4	5	12.5
1800-1999	1	2	4	10
Total	45	91%	37	92.5%

Baseline $\underline{M}=968$ (16 hours) $SD=296$

Field Test $\underline{M}=1344$ (22 hours) $SD=404$

$\underline{t}(80) = 4.92, p < .001$

IVD impact on student study patterns

Of interest in evaluating the IVD was the effect the IVD might have on student study time. As an additional course requirement, would it mean more time involved with course material, thereby increasing the total "time on task"? Or, would

it enhance the learning process in a way that actually reduced the time needed to learn a given amount of material? The original intent was to relate study time to modular test scores. However, instructors did not keep sufficiently complete records of modular tests. The effort to collect results of modular self-tests was so unsatisfactory for the Baseline group, that the effort was dropped for the Field Test. It was difficult to get students to remember to keep an on-going record of their study time, so this information is missing for 31% of the Baseline group and 40% for the Field Test group. What data were obtained on the number of hours studied shows a significant difference ($p < .01$), with the Field Test group reporting more total hours of study ($M = 178$) than the baseline group ($M = 130$) for the basic 11 modules. By itself, these data do not say very much, especially with the high proportion of missing data. In the context of information presented in the next section, however, it may be more meaningful. Students reported they often used the IVD as a break from other course work. Thus, they may have continued their involvement with German language beyond what might otherwise have been the case.

IVD use and impact

In this area there are responses only from the Field Test group. The relevant data derive from the IVD questionnaire (see Appendix D), station problem logs, and observation and interview notes. Frequency data will be presented from the IVD questionnaire, and any numbers related to comments or problems are reported if made by more than one person. Otherwise, comments and suggestions are presented as information of general interest to indicate the type and range of comments made. Some points were made by the same person both orally in discussions with the observer, and in writing on the questionnaire, and so are not additional data. Both are included because a broad range of points was made in the interviews, while students probably wrote down only those they felt most strongly about or thought were most important.

Equipment problems. Problem log sheets were attached to each of the IVD stations; during the orientation to the evaluation process, students were requested to log any equipment-related difficulties they encountered. Of the nine stations, only three logs sheets contained any entries. In one instance, a cable had come loose and was quickly fixed. The other recorded problems, and several unrecorded but noted in the observations, involved diskettes which did not function properly. The students quickly learned to simply exchange the diskette when they had this problem.

In addition to the fact that many students did not realize the "Speech" lesson required a unique second computer disk, there seemed to be bugs in the programming of that particular lesson which resulted in several students just giving up on it. As of the end of the Field Test the "Per Diem" game, which is the most

interactive lesson in the set, was still not in regular use. A few people had tried it out and, apparently, ran into problems, indicating the need for further debugging.

Five students in the interviews and eight on the questionnaire expressed frustration with the slowness of system response, and thought that more rapid, if not instantaneous, response should be possible. Three people commented in the interviews on the ease of use or "user friendliness" of the system, and 92% of the questionnaire respondents reported that they found the IVD "easy" or "very easy" to use. Ninety-five percent of the respondents indicated they were "usually" or "always" able to use the IVD when they wanted, although two persons did suggest that the facility be open and equipment made available at night.

Other suggestions relevant to the equipment were:

- "there should be a master switch to turn everything on"
- "the systems should be turned on in the morning and left on for the day"
- "make it easier to go backwards and forwards and sign off"
- "put the stations in the student rooms, away from distractions" (from two phase II persons; see observation section)

In general, equipment related problems did not seem to be a major factor in the general use of the IVD, or in individual decisions about using the system. Rather, specific lessons, namely, the "Speech" and "Per Diem" lessons were little used.

Courseware and Software problems. The major complaint related to the course was the lack of a glossary or some form of vocabulary helps in English. This was mentioned by all but a few persons in the interviews and written in as a recommendation for improving the system by 15 people on the questionnaire, more than any other item. Four people mentioned that some lessons were too long ("just go on and on, for example, 'Tankstelle'"). Three people mentioned that the initial lessons were too difficult, a perception generally supported by the staff. Five people in the interviews and three on the questionnaire wanted greater interactivity in the program. Problems with the sound or speech ("too fast") on specific lessons were mentioned, with the "Vacation" lesson singled out specifically.

Physical problems. On the questionnaire, only four persons indicated they experienced any physical problems relating to IVD use. Two persons requested either adjustable chairs or stations, so the viewing angle could be adjusted according to varying heights of viewers. One person found the headset

uncomfortable. And one individual, who was color-blind, reported persistent difficulty with the extensive use of the color red in the directions. None of the individuals indicated that the problems inhibited their use of the system, but were discomforts that showed up when they used the system for extended lengths of time.

Procedure problems. The major issue concerning procedures is related to the reported difficulty with the first lessons. The students not only had to try to get something out of the lessons presented in German, but also had to become familiar with the IVD instructions in German, all at once--a lot to take in at one time and quite threatening, even with the help feature which presented an English translation of the instructions. Very few people were observed or mentioned using the vocabulary and grammar helps while working with the questions, even though that should have been the context in which these helps could have been most meaningful. The students generally figured out a minimal set of basic instructions that would allow them to work with the IVD and continued to rely on that basic set throughout the course. Typically, this basic set did not include the specialized instructions, for example, how to fill in the blanks in the questions part of the program.

A common complaint and one on which students asked for help, was how to exit the system instantaneously. They only knew how to exit from the menu, which meant if they were at the tell (chapter) level they had to go down to the sub-segment level to get to the menu. If they were in a sub-segment they generally had to go through several steps to get back to the main menu in order to exit.

Some students had difficulty using the system passively if they wanted. That is, they could not view the material at the tell level and continue on through the next tells, without going into the interactive segment level.

Training on IVD equipment. In response to the questionnaire item about adequacy of the instruction received on use of the equipment, no one reported that it was inadequate. Responses began at "adequate" (N=5), and increased as the scale moved in the positive direction: "quite adequate" (N=13), and "completely adequate" (N=17). Not only were the individual students thoroughly briefed (45 minutes to an hour each) on the use of the system, but the availability of the Subject Matter Expert for the system throughout the Field Test enabled students to get any needed assistance as they got into actual IVD use during the course.

In addition to the orientation provided, each station had a written introduction to and overview of the system. With the ready availability of the Subject Matter Expert these were never observed being referred to. However, under normal conditions, without the Subject Matter Expert readily at hand, the written orientations might become essential.

IVD features. The questionnaire asked respondents to assess the importance and usefulness of various general IVD characteristics and specific features of the German Gateway IVD materials. Tables 16 and 17 present the results.

Table 16

User Assessed Importance of IVD Characteristics.

	Very Unimportant	1	2	3	4	5	Very Important
Immediate Feedback		2	2	4	13	14	(<u>M</u> = 4.00)
Visual Presentation		2	2	2	16	13	(<u>M</u> = 4.03)
Variety of Speakers		2	2	4	10	17	(<u>M</u> = 4.09)
Contextual Learning		3	0	3	14	14	(<u>M</u> = 4.06)
Active Involvement		3	2	12	12	6	(<u>M</u> = 3.46)
Interactivity		2	1	11	12	9	(<u>M</u> = 3.71)

Most of the unique characteristics of the IVD instructional mode were considered important by the Field Test students, with a noticeable difference between the last two items (active involvement and interactivity). This may be due to students perceiving the German Gateway IVD materials as not particularly interactive.

Table 17

User Assessed Utility of German Gateway IVD Features.

	Useless	1	2	3	4	5	Useful
Selecting Sub-segments	3	4	8	16	3	(<u>M</u> = 3.35)	
Replay Video	4	9	5	10	6	(<u>M</u> = 3.15)	
Keyword/Phrase Helps	2	9	7	6	10	(<u>M</u> = 3.38)	
Text with Audio	2	1	0	7	24	(<u>M</u> = 4.47)	
Vocabulary Helps	2	2	2	17	12	(<u>M</u> = 4.00)	
Grammar/Cultural Notes	3	4	8	9	11	(<u>M</u> = 3.60)	
Questions	4	1	9	11	9	(<u>M</u> = 3.59)	
Access Help in Questions	5	7	11	10	2	(<u>M</u> = 2.91)	

Clearly the most favored feature of the IVD program from the students' point of view was the ability to read the text of the video material they have just seen (text with audio). This feature is also the most compatible with other portions of the original German Gateway course which uses audio tapes with accompanying text. It is the familiar learning mode in the course, and this feature takes the new and makes it familiar.

In general, these responses reflect the typical way the students were observed to use the system: view the lesson; go to the text/audio, possibly using the vocabulary and grammar/cultural helps; then finish the lesson by going over the questions, but not using the helps in the process. They rarely used the replay video or the keyword/phrase feature of the IVD.

In some lessons the questions are presented via audio rather text. When asked about their preference for audio or text exercises, the majority (N=20) of the students checked the statement that they "found them equally effective and prefer the variation", although their comments suggested they were not clear about the distinction being made. Actually there were very few audio exercises among the questions so it is likely that they may not even have been aware of them. They seemed to interpret the question as referring to the text with audio feature of the IVD materials.

Almost no one indicated they either often or regularly intentionally selected incorrect answers, or chose alternate paths through the system in order to learn from the special helps

provided. On the other hand, students indicated they were often able to grasp the general meaning of the video presentations, and found the presentations to be interesting. The latter finding was especially positive, since the middle response of "some interesting, some uninteresting" might have been a seductively reasonable response, but most students (28 of 35 respondents) found the materials to be either "interesting" (N=23) or "very interesting" (N=5).

Factors affecting IVD use. Table 18 shows the importance of various factors related to the amount of IVD usage. The first set of items relate to why they used the system as much as they did, and the second part refers to why they didn't use the IVD more. As previously shown, most of the general characteristics of the IVD system are positively responded to by the students. The realism of the material and a break from other study have especially strong appeal, while not having time enough for extensive use is the greatest detractor. Liking or disliking computers is not an important factor in general, but can be decisive in individual cases.

Table 18

User Assessed Importance of Factors in Amount of IVD Use.

	Unimportant	1	2	3	4	5	Important
<hr/>							
Why Use IVD							
<hr/>							
Learn with visuals		1	1	7	19	7	(M=3.86)
Quality of Materials		1	2	5	20	7	(M=3.86)
Realistic Context		1	0	2	15	17	(M=4.34)
Like Computers		7	6	14	6	2	(M=2.71)
Quality of Equipment		1	4	7	16	5	(M=3.60)
Break Monotony		1	1	1	5	12	(M=4.30)
<hr/>							
Why Not Use IVD							
<hr/>							
Learn with other Material		6	4	11	8	5	(M=3.09)
Not useful to pass tests		9	6	9	3	7	(M=2.79)
Distracting procedures		11	12	8	1	2	(M=2.14)
Not enough time		5	4	3	6	16	(M=3.70)
Dislike computers		21	5	7	1	6	(M=1.68)
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IVD user assessment. Turning to the two items reflecting overall assessment of the IVD, these trial users very definitely supported continued use of the IVD as either an "excellent innovation with great potential" (N=15) or as a "useful aid which significantly contributes to learning" (N=14). Based on either the written or voiced comments, this recommendation is related to the kind and range of benefits indicated by the following general areas illustrated by sample quotes: (in order of frequency of comment shown in parenthesis)

1. A break: "a change", "a break", "get burned out on one mode", "entertaining", "reward", "recess", "interesting" (13)

2. Realism: "a good cultural acclimatizer to people, culture, places, and speed [of speech]", "realistic", "hear it as they speak it", "met objectives if these are: exposure to the way its going to be and getting the gist" (8)

3. Reinforcement: "a reinforcement tool--not essential, but an aid", "a check on myself" (6)

4. Speaker variation: "variety of speakers", "broader exposure" (5)

5. Special type of learning: "a different way of learning", "an additional dimension", "get certain things only from the video" (5)

6. Listening comprehension: "sharpens listening skills", "helps my ear" (4)

7. Idioms: "helps with idioms" (3)

8. Linguistic integrator: "brings things together" (1)

9. Flexibility: "I like option to use as I feel like--passive and superficial or active and in depth." (1)

10. Provides context: "context provided for text" (1)

On the negative side, major additional points made by the supporters of the system as well as from the detractors include:

1. Program integration: "Doesn't match up with requirements", "no structure on which material to use when", "should modify both the video and the course to fit together", "feels like I'm taking two courses", "I'm not sure of the target of the videos" (9)

2. Time: "no time for it", "not a priority of the program", "would like to use it more but there was no time" (8)

3. IVD slowness: "good system but too slow", (5)

4. A break but: "...gets boring quickly", "...probably not worth the money", "...doesn't do anything for me" (3)

5. Headstart: "its a mistake to substitute it for headstart" (3)

6. Not related to learning: "reinforcement but no good for learning", "wouldn't use it if not pushed to, doesn't make much contribution" (2)

7. Not appropriate for this course: "use it for exported training at intermediate level", "send it to learning centers"(2)

8. Better alternatives: "cultural information good but could be presented deeper by video tape" (1)

9. Fad: "Army is being captivated by technology. It's money spent in the wrong way" (1)

Finally, two of intriguing suggestions for additional video topics were made: a disc on cultural "faux pas" and preparation for the driving test.

Summary

Comparison of language proficiency between the Baseline and IVD groups showed the IVD group to have significantly higher scores. However, because of a change in the final exam at the time of the field test and the presumed impact that a new final exam has on both teaching and learning, it is not possible to separate the effects of the changes in the final from the effects of the IVD. The most that can be said is that the new final and IVD in combination increased the measured proficiency of the German Gateway students. The higher scores of the IVD group are mainly the result of answering more of the questions. Whether the Field Test students were able to answer more questions because they were better able to understand the questions, (for example had better listening comprehension), were more willing to try to respond, or simply had better language skills cannot be determined.

Based upon the number of course modules completed, there is no evidence for this research to suggest that the IVD contributes to an increase in the amount of material which students cover. On the other hand, to the extent that students report spending significantly more time studying, and some of that time is involved covering the IVD material which is new material, they may in fact be covering more material.

The IVD does not detract either from the time the students spend with the instructors or from the student assessed importance of that time. Instructors remain the vital part of the German Gateway course.

The IVD material does not appreciably increase or decrease student evaluation of the German Gateway program, which remains high. Rather the IVD takes its place along with other course components as a positively valued part of the course. The only area where the program was rated significantly different was the higher Field Test rating of satisfaction with the level of listening comprehension achieved. This finding combined with the fact that a higher percentage of Field Test students rated listening comprehension as one of the easiest skills to learn, while more Baseline students rated listening comprehension as one of the most difficult skills, suggests that this is a major area of IVD impact. Further research on effects of the IVD, utilizing specific measures of listening comprehension, would be important in verifying the relationship, as well as clarifying the role listening comprehension has in overall improved proficiency.

Generally the students were positive in their overall reaction to the IVD, recommending its continued use in the program. They found the materials to be interesting and to offer a constructive break in their regular study. They especially liked the exposure to a variety of German speakers, the realistic context provided, the quality of the materials, and the inclusion of a visual learning mode in the program. After the first few lessons, students were generally able to get the gist of the presentations. They were adequately oriented to the system, found the equipment easy to use, and the procedures did not detract from the learning. Generally, attitudes about computers did not seem to be an important factor in assessments of the system.

On the negative side, students and staff alike thought that Headstart was still needed in the program, while at the same time feeling they also need more time to spend on the IVD. Many identified a lack of clarity with how the materials fit into the program indicating a need for a clearer definition of the role of the IVD in the program.

The text and audio presentation of the visual material and the vocabulary helps were the most popular of the special features of the program, followed by the grammar/cultural notes, questions and sub-segment selection option. The ability to replay the video, have keywords or phrases highlighted, or access helps while working with the questions were not regarded as especially important features. Further, students did not try to use the help that came from wrong answers. The strongest criticisms were that there were no English glossary or translations provided, and that the system response was too slow, taking too much of the very limited time they had for IVD use.

RESULTS: OBSERVATIONS

Observation process

A single observer (AE) conducted on-site observations for the major part (March through May 1986) of the field test on a half-time basis by alternating morning and afternoons on successive days of the week. The observation process consisted of making periodic notations of the number of systems in use, patterns of some users as they became established, and other characteristics related to IVD use. Comments by both faculty and students directed to the observer, as well as overheard comments were recorded. With student permission, a small sample of students was systematically observed throughout an IVD study session. These observations consisted of noting how the students proceeded through the lesson, and other behaviors such as taking notes or making flash-cards. Similarly, three instructors were observed and questioned as they reviewed some of the lessons, to discover not only how they chose to proceed through the lessons, but also what they looked for, any criticisms, ideas, and specifically noted materials. During the last six weeks (June through mid-July), the time spent in observations was greatly reduced both because there were few persons in the program and because it became more difficult to perform the observations due to nature of the changed facility, which will be discussed.

What follows is based on information gathered from observations. The observation process itself determined the content of the information gathered to a great extent. That is, the process resulted in the recognition of issues, patterns, and questions which then became the basis for subsequent observations and interview topics. In this way, the context within which the field test took place, and the many factors that had an impact on the field test situation, became apparent.

Description of the German Gateway field test

The field test of the IVD materials in the German Gateway program divides into two distinct phases and will be presented accordingly. The phases are primarily distinguished by the location of the program, but as will be evident, location incorporated many other relevant features. Typically, each year during the peak student input periods, the Gateway program must expand its operations beyond the normal Gateway site. This year, the program moved part of its operations to a former elementary school now used by DLI. The Lighthouse School building is located on a residential street in Pacific Grove, California, about two miles away from the main DLI campus. The Gateway building, on the other hand, is a small barracks-like building located on the Presidio of Monterey, used exclusively by the German Gateway program. Students who started at the Lighthouse building completed the entire program there. The transition back to the Gateway facility took place by having new students start the course there rather than by moving anyone.

The Headstart portion of the program was dropped in order to have more time for the IVD materials. This meant that the instructors had to devise a means of incorporating the material that would normally have been covered by Headstart into the Gateway course.

Phase I: Shakedown

The first phase, consisting of two student inputs for a total of 25 subjects, took place under unique conditions at the Lighthouse School facility. For about the first week, it was as much a "shakedown" of the German Gateway program operating in a different environment and under different conditions as it was of the IVD. After some initial chaos created by the move, crowding, lack of heat and other minor amenities, the program seemed to settle into a smooth and comfortable operation. At this facility there were four large student study rooms with 4 to 7 students per room with two video stations in the center of each room. Noticeable differences in both study and IVD use behavior were observed among the rooms, suggesting the operation of emergent norms relative not only to the IVD system, but also to the German Gateway program in general.

Students were told they were participating in a field test, that they were expected to use the IVD materials and were given a one-on-one orientation to the IVD system. In the orientation the students were encouraged to explore the system, develop their own approaches, and to use the system in whatever way worked best for them. The German Subject Matter Expert who had helped develop the German Gateway IVD materials now shifted roles and was on hand as the IVD system expert to orient, trouble-shoot, answer questions, and generally support and encourage the use and integration of the IVD in the program. For example, as the time for taking the midterm examination (an informal, ungraded test to give students feedback on how they are progressing) approached for some of the students, he posted a notice identifying the IVD lessons related to the topics covered by both the midterm and final.

So far as could be determined from the general observations, all students began with the system defined approach. That is, they simply proceeded through the system as it was set up: viewing a segment, using the various system features pertaining to the lesson, then proceeding on to the next segment of a program. Later, variations began to emerge from individual experimentation. These methods seemed to develop as students tried to get the most from the limited time they allotted themselves to IVD use.

During the first two weeks instructors were, at times, observed sitting with a student at an IVD station, often with several other students looking on, listening, and asking questions. As student demands of instructor time increased, this phenomenon ceased and students worked alone at the IVD stations.

IVD use. The way in which students used the IVD materials during this initial phase can serve as a basis for the development of categories to characterize student use patterns. Five discernable patterns were identifiable: Non-users, High Users, Regular Users, Dependents and Others.

Six persons were essentially non-users of the IVD system. One was simply against technology and was strongly opposed to the system from the start. Of the other five, three did not use the IVD materials at all after the first couple of weeks, with the other two using the materials only occasionally. All five shared a similar attitude, regarding the IVD material as possibly useful if they had the time for it, but the rest of the course was assumed to contain the "meat" that had to be covered. None had prior German training and all were very concerned about just getting through the course. Because of the time involved in using the IVD materials, they considered the IVD an impediment rather than an assist in reaching their goal.

Four of these persons shared a room at the end of the corridor separate from the central flow of traffic. They evolved a unique arrangement of working in pairs even when meeting with instructors. In essence, they developed a social bond which supported their learning effort and included normative definitions of both the course and the IVD materials.

Two persons could be considered high users of the IVD by virtue of regular and extensive use of the system. Both began with considerable background in German and were highly motivated to attain as much functional language ability as possible. One person who had had three years of German in high school used the books and audio tapes at night as refresher materials. He concentrated most of his days in the program on getting as much conversational practice as possible with instructors and using the IVD materials. The use pattern of the second person was similar, except with less German language background, he spent somewhat more time with other course material.

Regular users constituted the largest user category in the initial phase. These persons were somewhat intimidated by the first IVD lessons, so were slow to begin use of the IVD and did so only with instructor urging. They generally used the videos at the completion of the rest of their work on each module as instructors suggested. The instructors recommended viewing the videos as review, summary, and reinforcement. IVD use picked up as these students progressed through the course, and acquired more of a language base. Passing the midterm, as well as their own sense of a growing ability to use German, resulted in a more relaxed approach and more use of the IVD which was referred to as "recess", "a reward", "the fun stuff."

The regular users exhibited characteristics of both non-users and high users. At the beginning when they were concerned about their ability to get through the course and intimidated by

the task of learning the language, they concentrated on the standard program which was also a more familiar learning mode. As they developed some facility and security in the language, they were able to focus on using the language in real contexts, turning more to the IVD materials in the process.

Two of the regular use students were of particular interest as the only ones who managed to do what many, including non-users, said they intended to do. They finished the regular program and final exam several days before they were due to depart, spending the final days on the IVD materials. In fact they succeeded in keeping "their" system when movers came to move it to the Gateway building. They were the only students who not only had a chance to complete all video materials but also went back and reviewed earlier lessons as a way of unifying the course material with situations they would soon be confronting.

One regular user could almost be considered to represent the ideal in approach to the course in general and the IVD in particular. His background in Educational Technology gave him a clear understanding of the role of such materials. The various components of the course seemed to be accepted on a roughly equal basis, all relevant, useful and used. He was one of the few who did not voice any problem with lack of integration of the IVD material into the rest of the program, nor did he get caught up in the question of whether these materials were a good idea or not.

Dependents in the German Gateway program have a somewhat unique situation. They do not have the pressure that their sponsors do to complete the course with an acceptable grade to go on their records. On the other hand, they do have incentive to achieve real functional ability. As one dependent put it: "We're the ones that will actually be doing most of this kind of stuff" (handling the kinds of situations covered in the course).

The dependents were also handled differently in the program during the field test. They went through the headstart materials first, then moved through as many Gateway modules as they could. Several of the dependents spent much of their last week or two working with the IVD materials, finding them to be the most useful to their perceived needs.

Two other persons who do not fit into any of the above categories are worthy of note because their circumstances suggest other important issues. The first is a person who had to complete the program in four, rather than seven weeks. As someone with extensive computer background he began using the IVD materials immediately, intrigued as much by the idea as by the content. However, after his initial effort he concentrated on the other materials using the IVD system very little until he completed his final. He then spent about two days going through as many of the IVD lessons as he could. This person served to draw attention to the potential relevance of comfort or

discomfort with computers as an intervening factor in the use of the IVD. However, subsequent observation and interview information suggests that neither strong computer background nor initially voiced concerns about inexperience with computers had significant impact on use of or attitude about the IVD for the rest of the students. This coincides with the finding from the questionnaire data that like or dislike of computers was not an important factor in student assessments of the IVD. Computer background is not a variable on which systematic data was collected in this study, but might be a variable worth examining in future research.

The second person falling into the other category is relevant in demonstrating a potential misuse of the IVD. This person spent the first weeks in the course working on the IVD to the exclusion of other course material. Until his instructor intervened, he was going through the modules quite superficially, covering several lessons a day. Without a background in German, he was probably gaining very little functional ability. Put on notice that he was jeopardizing his chances of completing the program, he began to use other course materials to the exclusion of the IVD, using it very little after the high use start.

Initial phase summary. Non-users were those who tried the IVD system a few times early in the program, then used it very rarely or not at all for the duration. In this first phase group, all the non-users were zero level beginners. High users typically averaged 2 to 4 hours per day working with the IVD materials. They had fairly strong backgrounds in German and used the IVD materials to refine and extend solid linguistic ability. Regulars were the students who generally worked with the IVD lessons for each module as they went along. Some completed the basic module materials then viewed the videos, others turned to the videos as a break in the process of covering a module. In the beginning, they were somewhat intimidated by the IVD materials and initial use was low. As the course progressed their use of the IVD picked up and became a regular part of their routine. The position of the dependents in the program was initially confused and they were uncertain about using the IVD system. They began as non-users while covering Headstart, gradually tested the system as they progressed through German Gateway Course, and ended as high users. Others were those who exhibited unique patterns for individual reasons and therefore do not readily fit into the above categories.

For the most part the general attitude of persons in this first group towards the IVD materials was quite positive, even among the non-users. They liked having the visual material as a break from text and audio tapes, and they appreciated the realistic perspective provided on the situations they would be encountering in Germany.

The most prevalent complaint was that the system help features were, in fact, of little help. When definitions and explanations were provided in German, the helps were often understood little better than what was being defined or explained. The students were then forced to turn to dictionaries, instructors, or "just forget it." They found this to be too time-consuming and frustrating. Eventually many ceased to use these helps. Some of the non-users claimed this was their major objection to using the system.

The second common complaint was that the IVD materials were not integrated into the rest of the course. Students often did not find a fit, by topic, vocabulary, or structure between the course modules and the IVD materials designed to accompany them. One or two students were able to discern the difference in underlying pedagogies and felt caught in a conflict between them. There was no consensus on how the IVD could or should be integrated into the program. There was simply a pervasive recognition that there was no integration.

Both students and staff expressed a need for a better matching between the ability levels of students and that required by the IVD materials. The IVD materials maintained a constant language level while student abilities changed. The result was that the first lessons were perceived as too difficult and the later lessons, especially the questions, as "insultingly" easy. The difficulty of the early lessons heightened the anxiety of some students, and although no long-term problems resulted, one instructor reported having to expend considerable effort to offset this effect.

The unique situation at the Lighthouse facility gave rise to more of a social context than typically occurs in Gateway with the result that there developed normative definitions related to both the program and the IVD system. The arrangement there facilitated observation and easy non-interference observer access to students and staff to pick up comments, ask questions, and conduct on-the-spot interviews on an on-going basis.

There was no detectable general attitude toward the IVD materials on the part of any instructor. In line with the official field test policy they regularly suggested that students view the videos upon completion of a module as reinforcement or as a break before going on to the next course module. The non-users were encouraged but not pushed to use the IVD. In this context the individual use patterns described above could emerge.

Interviews were conducted with instructors as this phase ended. They expressed generally positive reactions, though were neither strongly enthusiastic nor especially critical. In contrast, the question of whether they thought the materials would be useful in the DLI German Basic Course elicited very definite enthusiasm. Every instructor described in some detail how he or she would like to use the videos in the Basic Course.

A problem was identified in response to a direct interview question about the impact of dropping Headstart. The instructors seemed to accept that they had to make up for some of the missing background, but did not communicate this as a particular problem. However, one instructor, involved in administering the Oral Proficiency Examination, did note that there were gaps in the students' backgrounds in some basic areas that showed up even at the end of the course--a fact that suggests it might be difficult for each instructor to insure that all Headstart material is somehow incorporated.

Phase II: Settling in

The transfer of the program back to the German Gateway building offered a chance to see what differences, if any, occurred as the IVD was settled into the program's home. While the initial phase group finished their course at Lighthouse, new students were entering the program at the German Gateway building and several IVD systems were moved to that facility. At this point, conditions in the field test changed. Students continued to be informed of the field test and provided one-on-one orientations, but the orientation itself changed somewhat, benefiting from the earlier experiences. The rationale for the absence of English was more fully explained; comments from previous users could now be quoted, for example, "This seems to bring it all together." Examples of how students might choose to use the system were described based on what previous users had actually done.

The normal course of Gateway instructor rotations and temporary assignments resulted in more variation in instructional staff in this phase. Three new instructors were brought in for the first weeks at Gateway until the last Lighthouse students finished the program and the instructors there were free to make the transfer. Two of the original four field test instructors left the program while a third rotated out four weeks later, leaving only one of the initial phase instructors in the program for the duration of the field test. One of the new instructors continued in the program and one of the initial phase instructors rotated out after four weeks. Table 19 depicts these staffing changes.

Field Test Instructor (A-G) Location (L=Lighthouse, G=Gateway)
by Month (March-July 1986)

G-- GGGG

The same conditions that curtailed the observation process also impacted on the program with a decrease in the social context of learning that had developed at Lighthouse facility.

There were no strongly supported group attitudes affecting IVD use, nor normative patterns supporting specific study activities. Nevertheless a certain amount of observation was possible, permitting the tentative conclusions which follow.

IVD use. The first inputs at Gateway seemed to follow the pattern of regular users of the initial group: slow start on the IVD while students became more comfortable with the course and the language, then their use of the IVD materials picked up. They seemed to accept these materials matter-of-factly, as just a part of the course. There were also some very low or non-users, most of whom intended to use the IVD materials at the end of the course and often never got around to doing so. There were no apparent high users in this group. Two dependents continued the pattern of regular to high IVD use.

Later student inputs in this second phase demonstrated a marked reduction in IVD use. Many students were not encouraged to use the IVD materials until about halfway into the program, then often simply did not find time for it. Information from the baseline student interviews suggests that, roughly midway into the program, students realize they cannot "do it all" and begin to limit their expectations of what they will be able to cover. This is a rather unpropitious time to introduce a new element with which students have had little or no previous experience. It would probably be better to follow the earlier practice of introducing students to the IVD materials and encouraging their use, "as a break" at least, from the beginning. The system then would be familiar when later it became a highly recommended part of the course.

Second phase summary. During the second phase of the field test the Headstart issue emerged as a focal one with most students voicing the opinion that Headstart was an absolute requisite for Gateway for anyone with no background in German. Complaints about the lack of English in the IVD materials persisted. The issue of integration, while still sometimes recognized, was less relevant compared to the Headstart issue. An additional common criticism voiced by this group was about the slowness of the system, both in the loading process and in responsiveness. There was also general agreement that the IVD materials were too advanced to be of any use until somewhere between Modules 4 and 6 of the German Gateway course.

Instructors were more variable in the second phase both in total number of instructors in the program and in changes in the instructors working with particular students. Reflecting the rotations of instructors into the program and the changes in the student population, this fact is a normal part of the program that happened to affect the second phase group differently than the first.

To the extent that the first subjects during this phase followed the most common pattern, that of regular users of the initial phase group, it became easy to assume that this was to become the more or less established pattern. A picture began to emerge of the place the IVD materials would probably occupy in the German Gateway Program: as something that could hone and extend the abilities of the more advanced student; another learning mode and a "break" for the average student; but as a dispensable element for those who felt overwhelmed by the amount of material to cover. As final student input into the field test and subsequent student inputs demonstrated a downward trend in the use of the IVD materials, that picture had to be revised.

By the end of the field test, the IVD materials were being used only upon completion of the basic 11 modules in the course. Comments by both instructors and students indicated there was little program encouragement to use the IVD materials. As one student put it: "It doesn't seem structured to use them. It's structured to sit here and work on the modules, to go in to see the instructor, and to come back and work on the modules some more. There isn't time for anything else." And as one instructor observed: "You better do something to promote your system. Hardly anyone is using it"; indicating a lack of ownership for this system. Possibly after the field test, and the disappearance of the "outsiders" (observer and SME) this attitude may change.

Just as the first weeks of the initial phase involved a transition into the field test, final weeks of the second phase seem to involve a transition out of the field test. With both the system expert and the observer spending much less time on-site, the visibility of a field test taking place was diminished. Along with the end of the field test was an apparent end to the policies instituted for the field test. Students in the German Gateway program but not in the field test neither were being systematically oriented to the IVD system nor were told to use the IVD materials before going onto the next modules. The IVD materials were simply available for use.

IVD system use. The most IVD stations observed in use at once was six (of nine available) for 25 students, although on two occasions the observer, arriving in the afternoon, was told by both students and staff that all systems had been in use the previous morning. "You should have been here this morning, I couldn't find a video open," a student reported. At the other extreme, there were numerous occasions when there were no IVD stations observed in use for days at a time. The average number of IVD stations in use per observation was just under three for the first phase and slightly over one for the second phase. As already indicated, the location of the units, the use patterns of the particular students in the program at the time, and the orientation of the program towards using the IVD materials are the main determinants of the number of units required by the program. If the pattern of the regular users became the common

one, about one IVD station per 3 to 5 students is probably adequate. For example, the two stations per student room of 4 to 7 people at the Lighthouse facility seemed to work out well. Having stations in individual student rooms as was done at the Gateway facility discourages use by any student other than the room occupant, and would almost require a unit per student.

Fitting the IVD materials into the German Gateway program

The explicit definition of the role of the IVD materials in the German Gateway program is as a "supplement" to the existing program with the purpose of "reinforcing" the learning/instruction of the rest of the program. The fact that both terms are regularly used by staff and students alike with reference to the IVD materials would seem to suggest the existence of a consensus on how these materials fit into the program. There are, however, variations in the meaning of "supplement" as the concept is translated into practice. There is also a lack of clarity around the meaning of "reinforcement".

Supplement, as a concept put into practice, seemed to have any or all of the following possible meanings depending on the situation, the person, or the perspective.

1. Similar to the German language magazines and newspapers available in the lounge; that is, something separate from and external to the course, which stimulates interest and provides a challenge to learning but is not part of the program of instruction. It's a realia for casual use as time and interest dictate. As the field test ended, it appeared that the German Gateway program was returning to basically the pre-field test status where the course is conceived as the set of module material and personal instruction, except that the IVD materials are available for summary or overview as time permits. Non-users also demonstrated this conception during the field test.
2. As something appropriate for the student with some background in German, to stimulate and enhance their learning beyond the program's normal offerings. It extends the range of material available. The awareness that zero level beginners are threatened by the IVD materials and that the more advanced students

make the most use of them, results in this as an unintended but emerging conception. The practice of encouraging use only after students have completed approximately half the course also promotes this definition.

3. As a specialized element contributing uniquely to the teaching/learning process. It is an essential part of the course to be used regularly along with other course materials. The field test policy of requiring that students view the videos as part of their coverage of a module supported this definition as did the actual use patterns of the majority of field test students. This conception is not sustained without its specification as policy and possibly other support.
4. As the central component of the course, to which other parts of the course should be adapted. It is the element around which the program should be organized. Only the suggestions of some of the students, in the context of how the IVD should be integrated into the program, and the use patterns of the highest users supported this conception.

Reinforcement can also have a variety of meanings. Specification of the "what" and "how" of reinforcement is needed. "What" may be considered the overall program, specific components (i.e. instructors, existing text, audio, and test materials), or specific student linguistic skills. Logically, then the place of the IVD materials in the program would be dictated by defined learning, program or instructional objectives. The variation in the operational definitions of "supplement" indicates that there is also no operational consensus on objectives for the IVD.

DISCUSSION AND RECOMMENDATIONS

The German Gateway project demonstrates several possibilities for using a particular set of IVD materials to support a short term intensive foreign language instructional program. There is evidence of a range of conceptions as to how the IVD materials should fit into the program, what they can contribute to language learning and how they are to be used by students and instructors

to achieve various objectives. This situation provides useful information for purposes of research and evaluation but is confusing to students and staff alike. What is now needed is consensus on a central definition of how to make the best use of these materials in support of program objectives, and the formulation of program policies to operationalize that definition.

The German Gateway project also provides a basis for identifying some of the difficulties involved in the adoption of IVD into an existing program. Central problems concern questions of equipment security, maintenance, and training; and integration of the new materials into existing curricula. Failure to address these questions limits students' use and results in probable short-term program utility of the IVD materials.

From a cost-effectiveness perspective it makes a great deal of difference whether IVD materials will be an auxiliary realia feature in a program used by a few students once in a while or an integral part of a program used by most students on a regular basis. Regardless of what final use is made of the IVD materials in the German Gateway program, the experience to date can be used to identify some general recommendations for effectively incorporating IVD technology into an instructional program.

The following recommendations are based only upon the German Gateway program but provide a general framework for identifying relevant factors for consideration in planning for implementation and maintenance of IVD innovations in any instructional program.

Supports

Orientation to and maintenance of the IVD system. Some possibilities are: a program to train instructors to troubleshoot the IVD equipment and to orient students; identification of someone to perform these functions on an on-going basis; or possibly, replacing the personal orientation with packages similar to the German Gateway modules containing the diskettes, instructions, learning objectives, and ideas for alternative modes of using the system. In addition, a system of logistics for replacing diskettes and performing any other routine maintenance functions needs to be established.

Instructor orientation. Provision of time for instructors to become familiar with the IVD materials is needed. It is estimated that simply viewing all of the videos (without using any of the special functions) would require 2 to 3 days. Options might include allotting time to new Gateway instructors prior to beginning in the Gateway program or reducing student load to provide time on a daily basis.

Development of an instructor's manual. Such a manual might include "keywords" in the system, interesting cultural features, new idioms and vocabulary, and indications of where IVD language

usage differs from that presented in the regular course. These are some of the things instructors looked for as they previewed the IVD materials. Other inclusions could be developed according to results of discussions with instructors.

Staff development. Training devoted to examining and developing ways for instructors to work directly with IVD materials. The field test dealt with the IVD only as a self-study method. Yet the possibility of profitable instructor mediated interaction with these materials with one or more students is suggested by the interest and experience of the first days of the field test and the request by students for more conversational practice. Using the IVD system as a base for developing practice dialogues and discussion could expand the skills supported by the system to include speaking.

Program/policy changes

Headstart. As already described, the field test entailed two different policies related to Headstart, neither of which seemed satisfactory. Eliminating Headstart completely left gaps in students' preparation for Gateway. Leaving the full program in the course is tantamount to insuring students will not have time for the IVD materials. A compromise might be to revise the Headstart portion with the intent that it become only a one week program for zero level beginners.

IVD materials and German Gateway integration. In the field test the responsibility for integrating the various elements of the course has been left primarily to the students. The student orientations to the program and to the IVD provide them with some guidance related to what they can get from different elements of the program. However, long range planning could appropriately include revisions of the German Gateway modules and instructor manuals as a result of rethinking the overall course as one now including IVD materials.

IVD requirement. The initial phase group had the requirement to view assigned IVD materials before going on to the next module. Few of the students in the final field test inputs even knew of such a requirement. There is no question that sessions with instructors and coverage of the German Gateway modules is required. Yet within these requirements there are individual differences in where students concentrate their efforts and the time students actually spend with instructors. Similarly, a policy requiring students to work with the IVD materials would serve to integrate the materials into the program, while permitting student choice and variation.

Physical arrangements/security. Issues concerning the physical set-up of the IVD stations were identified in the field test. One issue relates to the question of the best location for optimum student use. In the Lighthouse facility the stations were located in the student rooms readily available and visibly

used (or not used) by others, yet were away from the distractions of socializing areas. In the Gateway facility the stations were varyingly located in the lounge, hallways, or individual student rooms--that is, in the midst of movement and activity or readily usable by only one person. Some of the choices of locations were dictated by security measures which require that the equipment not be easily visible from the outside. In general, the choice of locations for the IVD stations was dictated by security, location of outlets, and what rooms were available, more than by any question of how to facilitate student use.

Modification of external practices

Headstart. Few students receive Headstart prior to arriving in the Gateway program. Few of those who do receive it actually study it. Efforts to change both the distribution system and the conception that Headstart is covered in the program could help at least reduce the amount of time needed to cover the material in the program.

Longer course. Even without the IVD material many students have said the course should be longer. Whether there is any possibility of having the course length re-defined by lengthened assignment could be explored.

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Appendix A
GERMAN GATEWAY PRE-COURSE QUESTIONNAIRE

Purpose of the Questionnaire:

The following questionnaire is designed to gather baseline data for the German Gateway program. In order to tailor our course to best fit the needs of the student, we are trying to get a reading on the types of candidates we get in our program. We are asking you to help in this effort by responding to the questions which follow. **YOU NAME IS NOT DESIRED** and all responses will be combined with others for aggregate statistical analysis; ie. **THIS IS A NON-ATTRIBUTABLE QUESTIONNAIRE.**

Date _____

Research Identifier _____

(circle the appropriate response)

1. Military Status:

- a. Military
- b. Dependent

2. Age

- a. 21 - 30
- b. 31 - 40
- c. 41 - 50
- d. 51 - 60

3. Educational Level:

- a. High school or less
- b. Some college or associate degree
- c. BA/BS degree
- d. MA/MS or higher degree
- e. Ph.D.

Based on experience with students in past German Gateway courses we have tentatively identified several factors related to course success. These include: exposure to German language and culture; previous training in German; previous training in a foreign language. The following questions relate to these factors as they apply to you. The information provided will aid us in verifying the relevance of these factors.

4. Have you ever been to Germany?

- a. Yes
- b. No

If yes, for how long? _____

How Recently? _____
date

5. Have you ever studied German in any formal or informal manner?

- a. Yes
- b. No

(If No go to number 10)

6. Was your training in:

- a. Home/Neighborhood
- b. High School
- c. College
- d. Graduate School
- e. Self-Study Program
- f. Other _____

specify

7. Was this training in:

- a. A civilian system
- b. A military system
- c. Both

8. What was the approximate number of semester hours or high school years (indicate which) of the above mentioned German studies that you participated in? _____

9. How long ago did you finish your last German studies?

- a. Within the last year
- b. Within the last 2 years
- c. Within the last 5 years
- d. More than 5 years ago

10. Have you ever studied another foreign language in any formal or informal manner?

- a. Yes
- b. No

(If No, go to number 15)

11. What language(s) have you studied? (If more than one, list in order of most to least fluent language).

1. _____

2. _____

3. _____

(In answering questions 11-14, write the name of the language(s) from question 10 above, beside the appropriate response)

12. Was your training in:

- _____ a. Home/Neighborhood
- _____ b. High School
- _____ c. College
- _____ d. Graduate School
- _____ e. Self-Study Program
- _____ f. Other

13. Was your training in:

- _____ a. Civilian system
- _____ b. Military system
- _____ c. Both
- _____ d. Other

14. What was the approximate total number of semester hours/high school years (indicate which) of your training in the language(s) studied?

15. How long ago did you finish your last language studies?

- _____ a. Within the last year
- _____ b. Within the last 2 years
- _____ c. Within the last 5 years
- _____ d. More than 5 years ago

The next questions are designed to obtain information on your attitudes and expectations before taking this course. For each item below, select from the following responses the one which best expresses your reactions. (Write the appropriate letter in the blank by each item)

- A. Strongly Agree
- B. Agree
- C. Disagree
- D. Strongly Disagree

- _____ 16. Knowing German will be important in performing my official duties in Germany.
- _____ 17. Taking this course is relevant to my Army Career.
- _____ 18. I do not expect to have any trouble learning German.
- _____ 19. Understanding German culture will be important to me while in Germany.
- _____ 20. I need to learn German in order to function in German society. (e.g., restaurants, stores, travel, etc.)

After completing this course, how well would you expect to be able to perform each of the following activities?

- A. I expect to do this very easily.
- B. I expect to do this easily.
- C. I expect to do this with difficulty.
- D. I expect to do this with great difficulty.

- _____ 21. Hail a taxi, give destination, pay fare and tip.
- _____ 22. Engage in "small talk" with Germans at a social gathering.
- _____ 23. Arrange hotel accommodations for myself and my family.
- _____ 24. Meet with German military personnel.
- _____ 25. Understand a weather report in German on the radio.
- _____ 26. Read and understand official correspondence in German.
- _____ 27. Make a welcoming or farewell speech in German to a German audience.
- _____ 28. Make an official phone call in German.
- _____ 29. Meet with a local government official.
- _____ 30. Respond to a complaint by the German police.

Appendix B

Entry Proficiency Exam (EPE)

P= Pronunciation; F= Fluency; S/C= Sociolinguistic Cultural;
C= Grammar; V= Vocabulary; T= Tasking

Assessment Items

	P	F	S/C	G	V	T
1. Ask candidate to name basic objects in the room. (table, chair, wall, floor door, window, light/lamp, plant, picture)	5	0	0	0	5	0
2. Ask candidate about the colors of the above-mentioned objects (white, black, gray, red, green, yellow, blue, brown)	5	0	0	0	5	0
3. Ask about family/family members (father, mother, children, baby, brother, sister, grandmother, grandfather)	5	0	0	0	5	0
4. Ask about the weather (is it hot, cold, warm, windy, raining, snowing, nice weather, terrible/bad weather)	5	5	0	0	5	5
5. Ask about the weekdays/S, M, T, W, TH, F, Sat)	5	0	0	0	5	0
6. Ask about the months (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec)	5	0	0	0	5	0
7. Ask about the day's date. (i.e. 2nd of Jan. 1982)	5	0	0	0	5	0
8. Ask about the year (1984)	5	5	0	0	5	0
9. Ask what time it is	5	5	0	0	5	0
10. Do a role-play-situation: bank. Task: cashing a traveler's check; the tester=bank employee	5	5	5	5	10	5
11. Do a role-play-situation: travel agency. Task: booking a flight, the tester=agency employee	5	5	5	10	10	10
12. Do a role-play-situation: on the street. Task: giving direction to a passerby; tester asks.	5	5	5	5	10	5
13. Do a role-play-situation: car breakdown Task: request help giving all pertinent information.	5	5	5	10	10	10
14. Ask the student to repeat a phone message in the TL.	5	5	0	5	10	5

Appendix C
Post-Course Questionnaire

Research Identifier _____
Date _____

For each of the following activities, indicate which statement best describes your estimation of your ability to perform the activity in German. (Place the appropriate letter in the space provided for each item).

- a. I can do this very easily.
- b. I can do this easily.
- c. I can do this with difficulty.
- d. I can do this with great difficulty.

1. _____ Hail a taxi, give destination, pay fare and tip.
2. _____ Engage in "small talk" with Germans at a social gathering.
3. _____ Arrange hotel accommodations for myself and my family.
4. _____ Meet with German military personnel.
5. _____ Understand a weather report in German on the radio.
6. _____ Read and understand official correspondence in German.
7. _____ Make a welcoming or farewell speech in German to a German audience.
8. _____ Make an official phone call in German.
9. _____ Meet with a local government official.
10. _____ Respond to a complaint by the German police.

How effective was the German Gateway course in helping you learn each of the following? (circle one)

- | | | | | | |
|--------------------------|--------------------------|---|---|---|------------------------|
| 11. Pronunciation | 1 | 2 | 3 | 4 | 5 |
| | Extremely
Ineffective | | | | Extremely
Effective |
| 12. Grammar/Syntax | 1 | 2 | 3 | 4 | 5 |
| | Extremely
Ineffective | | | | Extremely
Effective |
| 13. Vocabulary | 1 | 2 | 3 | 4 | 5 |
| | Extremely
Ineffective | | | | Extremely
Effective |
| 14. Idiomatic Expression | 1 | 2 | 3 | 4 | 5 |
| | Extremely
Ineffective | | | | Extremely
Effective |

For each of the language skills given below, indicate how satisfied or dissatisfied you are with the skill level you have achieved as a result of the German Gateway course. (circle one)

15. Understanding spoken German (listening comprehension)

1	2	3	4	5
Extremely				Extremely
Dissatisfied				Satisfied

16. Conversational Speaking Ability

1	2	3	4	5
Extremely				Extremely
Dissatisfied				Satisfied

17. General Reading Ability (e.g., newspaper, menu, street signs)

1	2	3	4	5
Extremely				Extremely
Dissatisfied				Satisfied

How important was each of the following instructional elements in helping you learn German?

18. Tape Narratives/Dialogues

1	2	3	4	5
Extremely				Extremely
Unimportant				Important

19. Text Materials

1	2	3	4	5
Extremely				Extremely
Unimportant				Important

20. Interactive Video

1	2	3	4	5
Extremely				Extremely
Unimportant				Important

21. Other Audiovisual Materials

1	2	3	4	5
Extremely				Extremely
Unimportant				Important

22. Instructors

1	2	3	4	5
Extremely				Extremely
Unimportant				Important

23. Quizzes/Tests

1	2	3	4	5
Extremely				Extremely
Unimportant				Important

24. Exercises at End of Narratives/Dialogues

1	2	3	4	5
Extremely				Extremely
Unimportant				Important

25. Based on your anticipated needs, how adequate was the amount of material in the course which simulated real life communication?
- | | | | | |
|-------------------------|---|---|---|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| Extremely
Inadequate | | | | Extremely
Adequate |
26. Based on your anticipated needs, how adequate was the amount of cultural information provided in the course?
- | | | | | |
|-------------------------|---|---|---|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| Extremely
Inadequate | | | | Extremely
Adequate |
27. Which element of the course did you find most difficult? (circle one)
- | | |
|----------------------------|---------------------------|
| a. Listening comprehension | d. Vocabulary |
| b. Pronunciation | e. Reading comprehension |
| c. Grammar/syntax | f. Conversational fluency |
28. Which teaching/learning component was most useful in learning what you marked in the question 26?
- | | |
|----------------|--------------------------------|
| a. Tapes | d. Tests |
| b. Texts | e. Interactive Video |
| c. Instructors | f. Other audiovisual materials |
29. Which element of the course did you find the easiest? (circle one)
- | | |
|----------------------------|---------------------------|
| a. Listening comprehension | d. Vocabulary |
| b. Pronunciation | e. Reading comprehension |
| c. Grammar/syntax | f. Conversational fluency |
30. Which teaching/learning component was most useful in learning what you marked in the question 28? (circle one)
- | | |
|----------------|----------------------------|
| a. Tapes | d. Tests |
| b. Texts | e. Interactive Video |
| c. Instructors | f. Other Interactive Video |
31. How would you describe your experience of the German Gateway course without the interactive video compared to your experiences of the course with interactive video?
- I liked non-video better; I felt I learned more with that approach.
 - I reacted to the two approaches about the same.
 - I enjoyed the video more, but my learning was about the same.
 - I preferred the video, and it seemed to improve my acquisition and use of German.
 - I did not have sufficient opportunity to use the interactive video to make a comparison.
32. If you marked a or d in the previous question, indicate in what area(s) your preferred approach was superior. (You may circle more than one.)
- | | |
|----------------------------|--|
| a. Listening comprehension | g. Feeling for situational appropriateness |
| b. Pronunciation | h. Confidence in the language and likelihood of trying to use German |
| c. Grammar/syntax | i. Understanding of the German setting or culture |
| d. Vocabulary | j. Motivation or enjoyment |
| e. Reading comprehension | |
| f. Conversation fluency | |

33. Did you have any problems with the equipment used in this course (e.g., poor fidelity of tapes; tape player malfunction, etc.)?

a. Yes

specify

b. No

34. Did you have any problems with the content of the taped material used in this course (e.g., sounds garbled/slurred, speech too fast or inaudible, etc.)

a. Yes

specify

35. Did you use the Headstart video materials?

a. Yes

b. No

If no, explain _____

36. During the course of studies, did your interest in the program:

a. Increase

b. Remain about the same

c. Decrease

why _____

37. Did you find the 6 weeks allowed for the Gateway Program to be: (circle one)

a. Far too short a time

b. Too short a time

c. Just right

d. Too long

e. Far too long

38. How many weeks would have suited you best? _____

39. How do you think the course could have been improved?

Appendix D
INTERACTIVE VIDEODISC USE QUESTIONNAIRE

The questions which follow deal with the use of the interactive video in teaching a foreign language. As a first user of these materials we would like your reactions, and any additional comments you wish to make, regarding this method of training.

Listed below are some characteristics of interactive video which students and teachers have found to be significant aids in learning. How important would you say each of these characteristics was to you in learning German (circle one).

	Very Unimportant			Very Important		
1. Immediate feedback	1	2	3	4	5	
2. Visual presentation	1	2	3	4	5	
3. Exposure to a variety of German speakers	1	2	3	4	5	
4. Opportunity for contextual learning (i.e., material presented in context of real situations)	1	2	3	4	5	
5. Active involvement (i.e., requirement to respond in order to continue)	1	2	3	4	5	
6. Interactivity (i.e., content responsive to student choice)	1	2	3	4	5	

How useful did you find each of the following features of the interactive video?

	Useless			Very Useful		
7. Select sub-segment while watching Teil (Return)	1	2	3	4	5	
8. Replay video (F1)	1	2	3	4	5	
9. Keyword/phrase helps (F2)	1	2	3	4	5	
10. Text with audio (F3,1)	1	2	3	4	5	
11. Vocabulary helps (F3,2)	1	2	3	4	5	
12. Grammar/Cultural Notes (F3,3)	1	2	3	4	5	
13. Questions (F4)	1	2	3	4	5	
14. Ability to use help features while working with questions	1	2	3	4	5	

15. Did you experience any physical discomfort such as eye fatigue, headaches, or lower back pain resulting from your use of the interactive video (circle one).

1. No (if no, go to question 19)

2. Yes _____
describe

If yes,

16. What effect did the problem have on your continued use of the interactive video?

1. none

2. somewhat reduced my use of interactive video

3. greatly reduced my use of interactive video

4. ended my use of interactive video

5. other _____

17. How frequently, did you experience the physical problem(s) when using interactive video (circle one).

1. all the time

2. over half the time

3. about half the time

4. less than half the time

5. very infrequently

18. Approximately how long could you work with the interactive video before experiencing symptoms? _____

19. Some interactive video exercises were presented via screen text and some via audio. Which do you prefer? (check only one)

_____ I preferred the video exercises because _____

_____ I preferred the text exercises because _____

_____ I found them equally effective and prefer the variation.

_____ I have no preference.

_____ Other (explain) _____

In numbers 20-28, circle the response which best describes your behavior or opinion.

20. In using the interactive video, did you intentionally select incorrect answers in order to review/learn from the various help features?

Never	Seldom	Sometimes	Often	Regularly
1	2	3	4	5

21. When you made a choice in a video segment, did you go back and follow other paths to see the difference?

Never	Seldom	Sometimes	Often	Regularly
1	2	3	4	5

22. How often were you able to grasp the general meaning of the video sequences on the first presentation?

Never	Seldom	Sometimes	Often	Regularly
1	2	3	4	5

23. How interesting did you find the interactive video materials to be?

1	2	3	4	5
Very Uninteresting	Uninteresting	Some Interesting Some Uninteresting	Interesting	Very Interesting

24. How easy or difficult did you find use of the interactive video equipment to be?

1	2	3	4	5
Very Difficult to Use	Difficult to Use	Borderline	Easy to Use	Very Easy to Use

25. How adequate was the instruction you received on how to use the interactive video equipment (e.g., you usually knew what to do)?

1	2	3	4	5
Totally Inadequate	Barely Adequate	Adequate	Quite Adequate	Completely Adequate

26. How often were you able to use the interactive video when you wanted (i.e., hours available, sufficient number of units)?

1	2	3	4	5
Almost Never	Seldom	Sometimes	Usually	Always

27. Would you recommend continued use of interactive video in the German Gateway Program?

1	2	3	4	5
Strongly Recommend Against	Recommend Against	Unsure	Recommend	Strongly Recommend

28. How often did you use the interactive video materials?

1	2	3	4	5
Never	Seldom	Sometimes	Frequently	Daily

How important were each of the following factors to you in using the video materials as much as you did? (circle one)

	Unimportant				Important
	1	2	3	4	5
29. Learn better with visuals					
30. Clarity/quality of video disc materials					
31. Realistic context					
32. Like using computers					
33. Quality of equipment					
34. Other (explain) _____					

How important were each of the following factors to you in not using the interactive video more than you did?

	Unimportant				Important
	1	2	3	4	5
35. Learn better from other materials					
36. Not useful to pass tests					
37. Procedures distracted from learning					
38. Not enough time					
39. Don't like using computers					

40. Other (explain) _____

41. How do you think the interactive video would be most effectively used in the German Gateway Program?

- _____ a. As a required supplement to the audio tapes and text materials.
- _____ b. As a replacement for the audio tapes with text materials developed to accompany it.
- _____ c. As an available supplement to the structure guide and workbook material for those who are interested and have the time to use it.
- _____ d. Other _____
describe

42. Based on your experience, how would you recommend someone coming into the program distribute their time (other than with instructor) in using course materials in order to benefit the most from this program?

- a. audio tapes _____%
- b. texts _____%
- c. interactive video _____%
- d. structure guide/workbook _____%

43. What improvements/changes would you suggest in the interactive video materials?

44. Do you have any recommendation for changes in the set-up of the interactive video study stations which would make them more convenient?

45. Did you develop any particular techniques, strategies, short-cuts, review procedures that you found especially effective in your use of the interactive video? If so, briefly describe. (Use bottom or back of this page if you need more room.)

46. Which statement below best describes your overall reaction to the use of interactive video in foreign language instruction? (circle one)

1. Excellent innovation; great potential.
2. Useful aid; significantly contributes to learning.
3. Some possible benefit to learning.
4. Minor benefit; contributes little to learning.
5. Useless; a waste of time, effort and money.

Appendix E
ORAL PROFICIENCY EXAMINATION

1) Wann und wo sind sie geboren?

Pronunciation	Fluency	Sociolinguistic/Culture	Grammar
0-5	-	-	0-5

Vocabulary	Task	TOTAL
0-5	0-5	20

2) Sprechen Sie bitte uber das Wetter in Monterey.

P	F	S/C	G	V	T	TOTAL
0-5	0-5	-	0-5	0-10	0-10	35

3) Was machen Sie meistens am Wochenende?

P	F	S/C	G	V	T	TOTAL
0-5	0-5	-	0-10	0-15	0-10	45

4) Your gateway group is holding it's annual reunion in January. It is your task to phone a restaurant and ask about opening and closing times, the type of food the restaurant serves and the prices. Then make reservations for the group, giving all the usual information for this task.

P	F	S/C	G	V	T	TOTAL
0-5	0-5	0-5	0-10	0-20	0-20	65

5) You are at a car rental agency. Communicate your wishes in regards to a rental. You might mention the type of car you want, the duration of the rental, point of return, insurance etc.

P	F	S/C	G	V	T	TOTAL
0-5	0-5	0-5	0-10	0-20	0-20	65

6) You are at the reception desk of a German hotel. Tell the clerk what kind of room you want; then ask about the price, whether breakfast is included, where you can park your car, etc.

P	F	S/C	G	V	T	TOTAL
0-5	0-5	0-5	0-10	0-20	0-15	60

7) Beschreiben Sie bitte das Zimmer in dem sie sich befinden!

P	F	S/C	G	V	T	TOTAL
0-5	0-5	-	0-10	0-20	0-15	55

8) Erzählen Sie bitte was Sie heute morgen alles gemacht haben!

P	F	S/C	G	V	T	TOTAL
0-5	0-5	-	0-20	0-15	0-15	60

9) Bitte verglichen sie Monterey mit ihren Heimatstadt!

P	F	S/C	G	V	T	TOTAL
0-5	0-5	-	0-15	0-15	0-15	55